Application No.: 10/656,182 Docket No.: M4065.0248/P248-C

Reply to Office Action dated September 8, 2004

AMENDMENTS TO THE CLAIMS

74. (Previously Presented) A copper bond pad for a semiconductor device, said bond pad comprising:

a dielectric layer formed over a substrate of said semiconductor device;

a barrier layer formed over said dielectric layer;

a copper layer formed over said barrier layer, said copper layer having an upper surface implanted with titanium, said copper layer having a thickness of about 500 Angstroms to about 20,000 Angstroms; and

an insulating layer over said copper layer.

- 75. (Currently amended) The copper band pad of Figure 74, wherein said upper surface of said copper layer implanted with titanium has a thickness of about 50 Angstroms to about 200 Angstroms.
- 76. (Previously Presented) The copper band pad of Figure 74 further comprising a passivation layer formed in contact with said copper layer, wherein said passivation layer is formed of a material selected from the group consisting of silicon oxide, oxynitride, silicon nitride, borophosphosilicate glass and polyimide.
- 77. (Previously Presented) The copper band pad of Figure 76 further comprising a via formed in said insulating layer and said passivation layer, said via exposing a portion of said copper layer and defining said bonding pad area.
- 78. (Previously Presented) The copper band pad of Figure 74, wherein said dielectric layer is formed of a material selected from the group consisting of

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phosphosilicate glass, borophosphosilicate glass, silicon oxide, silicon nitride, and silicon oxynitride.

79. (Previously Presented) An interconnect structure for a semiconductor die, said interconnect structure comprising:

a conductive bond pad containing a copper layer; and

a titanium-aluminum-copper-nitrogen layer formed over at least an upper surface portion of said copper layer.

- 80. (Previously Presented) The interconnect structure of claim 79, wherein said copper layer is elemental copper.
- 81. (Previously Presented) The interconnect structure of claim 79, wherein said copper layer contains a thin copper oxide layer thereon.
- 82. (Previously Presented) The interconnect structure of claim 81, wherein said copper oxide layer has a thickness not greater than 300 Angstroms.
- 83. (Previously Presented) The interconnect structure of claim 79 further comprising an electrical conductor bonded to said titanium-aluminum-copper-nitrogen layer.